

CLAIMS:

1. An automotive protective device comprising a woven textile substrate having two outer surfaces and pre-configured air holding cavities woven therein, each of said outer surfaces having an adhesive polyurethane layer coated thereon and a polymeric film laminated thereto.

2. The automotive protective device of claim 1 wherein said woven textile substrate is a nylon, polyester or other synthetic fiber.

3. The automotive protective device of claim 2 wherein said polymeric film laminate is a polyamide, polyester, polyolefin or polyurethane film.

4. The automotive protective device of claim 2 wherein said woven textile substrate is nylon.

5. The automotive protective device of claim 2 wherein said adhesive polyurethane layer comprises an aliphatic or aromatic polyester polyurethane or polyether polyurethane.

6. The automotive protective device of claim 5 wherein said adhesive polyurethane layer has a coating weight of from about 0.25 ounces per square yard to about 2.5 ounces per square yard.

7. The automotive protective device of claim 5 wherein said adhesive polyurethane layer has a coating weight of about 1.2 ounces per square yard.

8. The automotive protective device of claim 5 wherein said adhesive polyurethane layer has a solids content of from about 25% to about 45%.

9. The automotive protective device of claim 3 wherein said polymeric film laminate has a thickness of from about 0.2 mils to about 5.0 mils.

10. The automotive protective device of claim 3 wherein said polymeric film laminate has a thickness of from about 0.5 mils to about 1.0 mils.

11. A method of manufacturing an automotive protective device which comprises:

a) taking a woven textile substrate having two outer surfaces and pre-configured air holding cavities woven therein;

b) coating each of said outer surfaces of said woven textile substrate with an adhesive polyurethane coating composition; and

c) laminating a polymeric film to each of said outer surfaces of said woven textile substrate.

12. The method of claim 11 wherein said woven textile substrate is a nylon, polyester or other synthetic fiber.

13. The method of claim 12 wherein said adhesive polyurethane coating composition comprises an aliphatic or aromatic polyether polyurethane or polyester polyurethane, and an isocyanate material having a temperature at which it becomes activated and adhesively binding.

14. The method of claim 12 wherein said polymeric film laminate is a polyamide, polyester, polyolefin or polyurethane film.

15. The method of claim 13 wherein said adhesive polyurethane coating step takes place at a temperature below the activation temperature of the isocyanate material.

16. The method of claim 12 wherein said woven textile substrate is nylon.

17. The method of claim 11 wherein said woven textile substrate is first coated on each of said outer surfaces with an adhesive polyurethane coating composition comprising an aromatic or aliphatic polyester polyurethane or polyether polyurethane and an isocyanate material, to which coated outer surfaces a polymeric film comprising a polyamide, polyester or polyurethane film is thereafter laminated under heat and pressure sufficient to adhesively activate said isocyanate material.

18. The method of claim 17 wherein said polymeric film is laminated sequentially on said two outer surfaces.

19. The method of claim 17 wherein said polymeric film lamination takes place at a temperature of from about 275° F. to about 450° F. and at a pressure of from about 200 psi to about 1000 psi.

20. The method of claim 19 wherein said polymeric film lamination takes place at a temperature of about 400° F. and at a pressure of from about 500 psi to about 600 psi.

21. A composite sealing and air holding laminating film for use in the manufacture of an automotive protective device with a woven textile substrate having pre-configured air holding cavities woven therein, said composite laminating film comprising a polymeric carrier film and a layer of adhesive polyurethane coated thereon.

22. The composite sealing and air holding laminating film of claim 21 wherein

said polymeric carrier film is a polyamide, polyester, polyolefin or polyurethane film.

23. The composite sealing and air holding laminating film of claim 21 wherein said adhesive polyurethane coating comprises an aliphatic or aromatic polyester polyurethane or polyether polyurethane and an isocyanate material.

24. The composite sealing and air holding laminating film of claim 21 wherein said polymeric carrier film is a polyamide, polyolefin or polyurethane film and said adhesive polyurethane coating thereon is an aliphatic or aromatic polyester polyurethane or polyether polyurethane.

25. The composite sealing and air holding laminating film of claim 24 wherein said adhesive polyurethane coating layer has a thickness of from about 0.5 mils to about 5.0 mils.

26. The composite sealing and air holding laminating film of claim 24 wherein said adhesive polyurethane coating layer has a thickness of from about 1.0 mils to about 1.5 mils.

27. The composite sealing and air holding laminating film of claim 24 wherein said adhesive polyurethane coating layer has a solids content of from about 25% to about 45%.

28. The composite sealing and air holding laminating film of claim 24 wherein said polymeric carrier film has a thickness of from about 0.2 mils to about 5.0 mils.

29. The composite sealing and air holding laminating film of claim 24 wherein said polymeric carrier film has a thickness of from about 0.5 mils to about 1.0 mils.

30. A method of making a composite sealing and air holding laminating film for use in the manufacture of an automotive protective device comprising a woven textile substrate having pre-configured air holding cavities woven therein which comprises:

- a) casting a solution comprising a polymeric carrier film and a solvent onto a release paper;
- b) solidifying said carrier film layer by evaporating said solvent;
- c) coating an adhesive polyurethane layer onto said polymeric carrier film;
- and
- d) drying said adhesive polyurethane material.

31. The method of claim 30 wherein said polymeric carrier film layer is comprised of a polyamide, polyester or polyurethane material.

32. The method of claim 30 wherein said adhesive polyurethane layer comprises an aromatic or aliphatic polymeric polyether polyurethane or polyester polyurethane and an isocyanate material.

33. The method of claim 31 wherein said polymeric carrier film layer has a thickness of from about 0.2 mils to about 5.0 mils.

34. The method of claim 31 wherein said polymeric carrier film layer has a thickness of from about 0.5 mils to about 1.0 mils.

35. The method of claim 32 wherein said adhesive polyurethane layer has a thickness of from about 0.5 mils to about 5.0 mils.

36. The method of claim 32 wherein said adhesive polyurethane layer has a thickness of from about 1.0 mils to about 1.5 mils.

37. An automotive protective device comprising a woven textile substrate having two outer surfaces and pre-configured air holding cavities woven therein and a composite sealing and air holding laminating film comprising a polymeric carrier film and a layer of adhesive polyurethane coated thereon laminated to each of the outer surfaces of said textile substrate.

38. The automotive protective device of claim 37 wherein said polymeric carrier film is a polyamide, polyolefin or polyurethane film.

39. The automotive protective device of claim 37 wherein said adhesive polyurethane coating is an aliphatic or aromatic polyester polyurethane or polyether polyurethane.

40. The automotive protective device of claim 37 wherein said polymeric carrier film is a polyamide, polyolefin or polyurethane film and said adhesive polyurethane coating thereon is an aliphatic or aromatic polyester polyurethane or polyether polyurethane.

41. The automotive protective device of claim 37 wherein said adhesive polyurethane coating layer has a thickness of from about 0.5 mils to about 5.0 mils.

42. The automotive protective device of claim 37 wherein said adhesive polyurethane coating layer has a thickness of from about 1.0 mils to about 1.5 mils.

43. The automotive protective device of claim 37 wherein said adhesive polyurethane coating layer has a solids content of from about 25% to about 45%.

44. The automotive protective device of claim 37 wherein said polymeric carrier film has a thickness of from about 0.2 mils to about 5.0 mils.

45. The automotive protective device of claim 37 wherein said polymeric carrier film has a thickness of from about 0.5 mils to about 1.0 mils.

46. A method of making a composite sealing and air holding laminating film for use in the manufacture of an automotive protective device comprising a woven textile substrate having pre-configured air holding cavities woven therein which comprises:

- a) coating an adhesive polyurethane layer onto a carrier film layer; and
- b) drying said adhesive polyurethane material.

47. The method of claim 46 wherein said polymeric carrier film layer is comprised of a polyamide, polyester, polyolefin or polyurethane material.

48. The method of claim 47 wherein said adhesive polyurethane layer comprises an aromatic or aliphatic polymeric polyether polyurethane or polyester polyurethane and an isocyanate material.

49. The method of claim 47 wherein said polymeric carrier film layer has a thickness of from about 0.2 mils to about 5.0 mils.

50. The method of claim 47 wherein said polymeric carrier film layer has a thickness of from about 0.5 mils to about 1.0 mils.

51. The method of claim 48 wherein said adhesive polyurethane layer has a thickness of from about 0.5 mils to about 5.0 mils.

52. The method of claim 48 wherein said adhesive polyurethane layer has a thickness of from about 1.0 mils to about 1.5 mils.